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=> s l1 and l2 and l3
L4          11 L1 AND L2 AND L3

=> d l4 1-11 abs ibib

L4   ANSWER 1 OF 11  CAPLUS  COPYRIGHT 2006 ACS on STN
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AB Disclosed herein are oxygen generating compns. More specifically, the oxygen generating compns. comprise potassium superoxide (KO2) or sodium peroxide (Na2O2), a material for stabilizing the reactivity and oxidizing power of potassium superoxide or sodium peroxide, and optionally at least one selected from an oxidation catalyst of carbon monoxide, a material for improving the moldability and processability of the composition and a material for increasing initial carbon dioxide absorption rate. The oxygen generating compns. can be utilized in a wide range of applications. In particular, since the oxygen generating compns. according to the present invention have a very high compressive strength compared to pure potassium superoxide, they can be manufactured into a flat-plate filter capable of being mounted onto apparatuses such as air conditioners and air cleaners. The material for stabilizing the reactivity and oxidizing power of potassium superoxide or sodium peroxide is selected from calcium hydroxide (Ca(OH)2), aluminum hydroxide (Al(OH)3), magnesium hydroxide (Mg(OH)2), barium hydroxide (Ba(OH)2), calcium carbonate (CaCO3), talc and clay. The oxidation catalyst of carbon monoxide is selected from copper oxide (CuO), manganese oxide (MnO) and a mixture thereof (hopcalite). The material for improving the moldability and processability of the oxygen generating compns. is selected from glass powder, glass fiber, ceramic fiber, steel wool, bentonite, kaolinite, sodium silicate and potassium silicate. Since the oxygen generating compns. have stabilized reactivity and oxidizing power, they can be used in household goods. In addition, since the oxygen generating compns. have a higher compressive strength than pure potassium superoxide or sodium peroxide, they can be processed into various shapes.

ACCESSION NUMBER: 2005:1348885 CAPLUS
DOCUMENT NUMBER: 144:92895
TITLE: Oxygen generating compositions
INVENTOR(S): Rho, Man-Khyun
PATENT ASSIGNEE(S): J. C. Technologies, Inc., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 2005287224 | A1 | 20051229 | US 2004-916394 | 20040812 |
| JP 2006008492 | A2 | 20060112 | JP 2004-254464 | 20040901 |
| CN 1712348 | A | 20051228 | CN 2004-10074607 | 20040907 |
| WO 2006001607 | A1 | 20060105 | WO 2005-KR1593 | 20050530 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG,

KZ, MD, RU, TJ, TM
PRIORITY APPLN. INFO.: KR 2004-47084 A 20040623

L4 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AB A system and a method of storage and dissoln. of solid catholyte are provided. The system and the method employ a solid medium having a controlled surface from which solid catholyte particles suspended within a matrix of encapsulating species are dissolved and hydrolyzed producing hydrogen peroxide to be used in semi fuel cells of undersea vehicles. Encapsulating species are also dissolved and hydrolyzed rendering products completely usable in the semi fuel cell. Sodium peroxide is preferably used as the solid catholyte and potassium superoxide and/or sodium hydroxide are preferably used as encapsulating species.
ACCESSION NUMBER: 2005:1138314 CAPLUS
DOCUMENT NUMBER: 143:370146
TITLE: System and a method of solid storage and dissolution of a catholyte for use in electrochemical cell
INVENTOR(S): Tucker, Steven P.; Medeiros, Maria G.; Dow, Eric G.
PATENT ASSIGNEE(S): United States Dept. of the Navy, USA
SOURCE: U. S. Pat. Appl., 19 pp., Avail. NTIS Order No. PAT-APPL-10-637,081.
CODEN: XAXXAV
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 637081 | A0 | 20050325 | US 2004-637081 | 20040122 |
| PRIORITY APPLN. INFO.: | | | US 2004-637081 | 20040122 |

L4 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AB A safe and inexpensive method for the disposal of Na metal (or K metal) is reported in which a ceramic flower pot is half-filled with dry, fine-grained sand, Na residues are placed on the sand, a further layer of dry sand is placed on top of the Na, the flower pot is placed in a large porcelain tray or dish, and water is added to the dish. After a few minutes, water is drawn into the sand by capillary action, and after 1-2 days all the Na is converted into NaOH and H2. No increase in temperature was detected, and the reaction was very slow and inaudible. A warning is given that potassium is often encrusted with KO2, and explosions have been observed when such material was cut with a knife or destroyed by an alc. It is recommended that K encrusted with KO2 be placed very gently on the sand and be covered very gently with sand. This experiment with K was not performed because of the lack of the appropriate material.
ACCESSION NUMBER: 2001:823633 CAPLUS
DOCUMENT NUMBER: 136:122850
TITLE: A Facile and Environmentally Friendly Disposal of Sodium and Potassium with Water
AUTHOR(S): Roesky, Herbert W.
CORPORATE SOURCE: Institut fuer Anorganische Chemie, Universitaet Goettingen, Goettingen, D-37077, Germany
SOURCE: Inorganic Chemistry (2001), 40(26), 6855-6856
CODEN: INOCAJ; ISSN: 0020-1669
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB This work is a comparative study of the electrochem. windows and the basic processes on gold electrodes in LiClO4, NaClO4, and KClO4 solns. in propylene carbonate (PC). The anal. tools included cyclic voltammetry, electrochem. quartz crystal microbalance, surface-sensitive FTIR spectroscopy (ex situ, external reflectance mode), and XPS. The apparent electrochem. windows of these systems are anodically limited at potentials >1.3 V (vs. Ag pseudoreference electrode corresponding to 4.3 vs. Li/Li+) due to solvent oxidation The apparent cathodic side is limited due to the reversible bulk active metal deposition occurring at .apprx.-3 and <-2.7 V vs. Ag pseudoreference electrode for Li and Na, resp. In the case of the potassium salt solution, the electrochem. window is limited by a pronounced cathodic process <-2 V (vs. Ag reference electrode), which is attributed to irreversible reduction of solution species. Irreversible potassium deposition occurs at potentials <-2.5 V. This process cannot be separated from the reduction processes of the solution starting <-2 V. The study revealed that irreversible trace O2, trace H2O, and PC reduction form passivating surface films on these electrodes. These films act as a solid electrolyte interphase, i.e., they allow transport of the alkali metal ions through them. The study also found that the major constituent in the surface films is the PC reduction product CH3CH(OCO2M)CH2OCO2M. In general, the surface films formed on the noble metal electrodes in the Li and K salt solns. are more stable than those formed in the Na salt solns., because the sodium oxides, hydroxide, and carbonates thus formed are more soluble in PC than the corresponding Li and K compds.

ACCESSION NUMBER: 2001:282291 CAPLUS
DOCUMENT NUMBER: 135:98782
TITLE: Investigation of the electrochemical windows of aprotic alkali metal (Li, Na, K) salt solutions
AUTHOR(S): Moshkovich, M.; Gofer, Y.; Aurbach, D.
CORPORATE SOURCE: Department of Chemistry, Bar-Ilan University, Ramat-Gan, 52900, Israel
SOURCE: Journal of the Electrochemical Society (2001), 148(4), E155-E167
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB The hazardous materials regulations under the Federal Hazardous Materials Transportation Act are revised based on the United Nations recommendations on the transport of dangerous goods. The regulations cover the classification of materials, packaging requirements, and package marking, labeling, and shipping documentation, as well as transportation modes and handling, and incident reporting. Performance-oriented stds. are adopted for packaging for bulk and nonbulk transportation, and SI units of measurement generally replace US customary units. Hazardous material descriptions and proper shipping names are tabulated together with hazard class, identification nos., packing group, label required, special provisions, packaging authorizations, quantity limitations, and vessel stowage requirements.

ACCESSION NUMBER: 1992:135528 CAPLUS
DOCUMENT NUMBER: 116:135528
TITLE: Performance-oriented packaging standards; changes to classification, hazard communication, packaging and handling requirements based on UN standards and agency initiative
CORPORATE SOURCE: United States Dept. of Transportation, Washington, DC, 20590-0001, USA
SOURCE: Federal Register (1990), 55(246), 52402-729, 21 Dec

1990
CODEN: FEREAC; ISSN: 0097-6326
DOCUMENT TYPE: Journal
LANGUAGE: English

L4 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AB R1R2R3S+O X- [I; R1, R2, R3 = (substituted) C6-10 aryl, X = anion], useful as initiators for cationic polymerization of compds. such as diepoxides in the manufacture of coatings, are prepared by oxidation of the corresponding sulfonium salts using a peracid under basic conditions in a nonketone solvent. Use of the basic conditions and nonketone solvent improves the yield and eliminates contamination of the product with the starting material. Thus, a solution of 5.1 g NaOH and 6.7 g 30% aqueous H2O2 solution in 50 mL water was added dropwise to 300 mL MeOH containing 5.6 g (4-MeOC6H4)Ph2SPF6 and 6.1 g p-toluenesulfonyl chloride at 15° with stirring, and the mixture was allowed to warm to room temperature overnight to give 84% yield I (R1 = 4-MeOC6H4, R2 = R3 = Ph, X = PF6) (II). Irradiation of a mixture containing 100 parts bisphenol A diglycidyl ether and 3 parts II on tin plate with a 5000-W metal halide lamp 75 cm from the plate provided a tack-free coating in 2 mins.
ACCESSION NUMBER: 1992:131247 CAPLUS
DOCUMENT NUMBER: 116:131247
TITLE: Preparation of triarylsulfoxonium salts and their use as initators for cationic photopolymerization
INVENTOR(S): Irving, Edward; Taylor, David Alan; Lunn, Robert James; Innocenzi, John Paul; Haines, Alan Hugh
PATENT ASSIGNEE(S): CIBA Ltd., Switz.
SOURCE: Brit. UK Pat. Appl., 24 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | | DATE |
|---|---|---|---|---|---|
| GB 2238787 | A1 | 19910612 | GB 1989-27530 | | 19891206 |
| GB 2238787 | B2 | 19930303 | | | |
| JP 03271270 | A2 | 19911203 | JP 1990-333442 | | 19901129 |
| DE 4038536 | A1 | 19910613 | DE 1990-4038536 | | 19901203 |
| CA 2031428 | AA | 19910607 | CA 1990-2031428 | | 19901204 |
| FR 2655338 | A1 | 19910607 | FR 1990-15147 | | 19901204 |
| FR 2655338 | B1 | 19921002 | | | |
| US 5576461 | A | 19961119 | US 1990-622905 | | 19901206 |
| PRIORITY APPLN. INFO.: | | | GB 1989-27530 | A | 19891206 |
| OTHER SOURCE(S): | MARPAT 116:131247 | | | | |

L4 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AB The reaction kinetics of the interaction of NaO2 and KO2 with water vapor and CO2 at lower temps. (from -10 to +50°) were studied in dynamic conditions. At distinct times during the experiment the reaction products were analyzed to get the total alkalinity, the contents of active O, of peroxide O, and of the combined CO2. At 20-5° the reaction leads to separation of the total active O and to formation of metal hydroxide. At ≤0° there is only a separation of the superoxide O and formation of M2O2 that absorb water vapor and form hydrates and their solns. The most stable of these hydrates is Na2O2.8H2O. At 50-70° it begins to decompose with separation of O and formation of hydrated Na2O. It evaps. at 110-30°. The d. at 0° is 1.56. The reaction mechanism of the formation of Na2O2.8H2O is given. K2O2 hydrates were not observed. At higher temps. the interaction results in a total decomposition of the

superoxide with formation of carbonates exclusively. Na2C2O6 was produced in different ways. Increasing the CO2-pressure in the reaction vessel (from 3 to 760 mm.) and application of powdery substances eliminated undesirable effects in the process and resulted in a product of 95% purity. Properties of Na2C2O6 studied were: decomposition at 90-130° with separation of CO2 and O2, d. 2.075. K2C2O6 was produced with a purity of 88% when coming from KO2 and of 99% when coming from K2CO3 by electrolysis. The d. is 1.97 and 1.95, resp. K2C2O6 decompose at 155-60° with formation of KHCO3, decomposed at 180-200°.

ACCESSION NUMBER: 1964:88234 CAPLUS
DOCUMENT NUMBER: 60:88234
ORIGINAL REFERENCE NO.: 60:15407g-h,15408a-b
TITLE: Interaction of sodium and potassium superoxide with water vapor and carbon dioxide and the synthesis of peroxycarbonates
AUTHOR(S): Mel'nikov, A. Kh.; Firsova, T. P.; Molodkina, A. N.; Morozova, T. G.; Aksenova, I. V.
SOURCE: Khim. Perekisnykh Soedin., Akad. Nauk SSSR, Inst. Obshch. i Neorgan. Khim. (1963) 128-39
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L4 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB cf. CA 56, 6869e. The reaction of H2O2 vapor with solid MOH and M(OH)2 was studied in partial vacuum at 50° with continuous withdrawal of the H2O formed. The reaction proceeded only on the surface of the solid particles. The following products formed (yield given): Li2O 11, Na2O2 27, KO2 35, and CaO2 12%.

ACCESSION NUMBER: 1963:71235 CAPLUS
DOCUMENT NUMBER: 58:71235
ORIGINAL REFERENCE NO.: 58:12157e-f
TITLE: Reaction of hydrogen peroxide vapors with solid hydroxides of alkali and alkaline earth metals
AUTHOR(S): Mel'nikov, A. Kh.; Firsova, T. P.
CORPORATE SOURCE: N. S. Kurnakov Inst. Gen. and Inorg. Chem., Acad. Sci. U.S.S.R., Moscow
SOURCE: Zhurnal Neorganicheskoi Khimii (1963), 8, 560-2
CODEN: ZNOKAQ; ISSN: 0044-457X
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L4 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

AB cf. C.A. 50, 15308f. The equilibrium amts. of peroxides formed by exposing fused alkali metal hydroxides at 410 or 510° to dry or wet O were determined In dry O the maximum yields obtained were: LiOH, none; NaOH, 3% Na2O2;
KOH, 54% K2O2 or 22% KO2; RbOH, 137% Rb2O2 or 57% RbO2; CsOH, 165% Cs2O2 or 64% CsO2. With wet O the reproducible equilibrium peroxide content increases with increasing O pressure and decreasing H2O content of the gas, and with increasing temperature over the range 400-600°; at higher temps. the peroxide content of the melt decreases. Quant. examination of these dependencies suggests that the products are chiefly Na2O2, KO2, RbO2, and CsO2 in the resp. melts.

ACCESSION NUMBER: 1959:88291 CAPLUS
DOCUMENT NUMBER: 53:88291
ORIGINAL REFERENCE NO.: 53:15840f-h
TITLE: Transformations and equilibriums in alkali hydroxide melts. III. Peroxide equilibriums
AUTHOR(S): Lux, Hermann; Kuhn, Rudolf; Niedermaier, Titus
CORPORATE SOURCE: Tech. Hochschule, Munich, Germany
SOURCE: Z. anorg. u. allgem. Chem. (1959), 298, 285-301
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L4 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AB The sp. heats (cal./mole degree) of KO2, NaO2, KOH, NaOH, Na2O2, and BaO2 were determined in an adiabatic calorimeter, which is described in detail. The average values (between 19 and 100°) are resp.: 19.38, 17.13, 16.88, 15.12, 21.46, 16.0. The data were corrected for the impurities present in the samples.
ACCESSION NUMBER: 1952:34931 CAPLUS
DOCUMENT NUMBER: 46:34931
ORIGINAL REFERENCE NO.: 46:5950e-f
TITLE: Heat capacity of some peroxides and hydroxides of alkali metals
AUTHOR(S): Vedeneev, A. V.; Skuratov, S. M.
SOURCE: Zhurnal Fizicheskoi Khimii (1951), 25, 837-40
CODEN: ZFKHA9; ISSN: 0044-4537
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

L4 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AB Oxide is removed from ferritic and austenitic stainless steels by immersion at 700° to 900°F. in a fused bath of NaOH containing 0.5 to 3% of Na2O2 for periods up to 15 min., followed by pickling in dilute H2SO4 and in dilute HNO3 or an HNO3-HF mixture K2O3, KO2, Rb2O4, Cs2O2 and Cs2O3 may be substituted for Na2O2.
ACCESSION NUMBER: 1952:551 CAPLUS
DOCUMENT NUMBER: 46:551
ORIGINAL REFERENCE NO.: 46:87b
TITLE: Removing scale from ferrous articles
INVENTOR(S): Francis, Charles B.
PATENT ASSIGNEE(S): United States Steel Co.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 2569158 | | 19510925 | US 1946-649380 | 19460221 |

=> s l1 and l2
L5 211 L1 AND L2

=> s catholyte and l5
4222 CATHOLYTE
196 CATHOLYTES
4295 CATHOLYTE
(CATHOLYTE OR CATHOLYTES)
L6 1 CATHOLYTE AND L5

=> d l6 1-11 abs ibib

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AB A system and a method of storage and dissoln. of solid catholyte are provided. The system and the method employ a solid medium having a controlled surface from which solid catholyte particles suspended within a matrix of encapsulating species are dissolved and hydrolyzed producing hydrogen peroxide to be used in semi fuel cells of undersea vehicles. Encapsulating species are also dissolved and hydrolyzed rendering products completely usable in the semi fuel cell. Sodium peroxide is preferably used as the solid catholyte and potassium superoxide and/or sodium hydroxide are preferably used as encapsulating species.

ACCESSION NUMBER: 2005:1138314 CAPLUS
DOCUMENT NUMBER: 143:370146
TITLE: System and a method of solid storage and dissolution of a catholyte for use in electrochemical cell
INVENTOR(S): Tucker, Steven P.; Medeiros, Maria G.; Dow, Eric G.
PATENT ASSIGNEE(S): United States Dept. of the Navy, USA
SOURCE: U. S. Pat. Appl., 19 pp., Avail. NTIS Order No. PAT-APPL-10-637,081.
CODEN: XAXXAV
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 637081 | A0 | 20050325 | US 2004-637081 | 20040122 |
| PRIORITY APPLN. INFO.: | | | US 2004-637081 | 20040122 |

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(FILE 'HOME' ENTERED AT 15:26:27 ON 03 AUG 2006)

FILE 'CAPLUS' ENTERED AT 15:28:25 ON 03 AUG 2006
L1 1657 S SODIUM PEROXIDE
L2 85679 S SODIUM HYDROXIDE
L3 696 S POTASSIUM SUPEROXIDE
L4 11 S L1 AND L2 AND L3
L5 211 S L1 AND L2
L6 1 S CATHOLYTE AND L5